

# SEQUENCE LISTING

<110> MACIAG, Thomas  
 ZIMRIN, Ann  
 SMALL, Deena  
 PRUDOVSKY, Igor

<120> THERAPEUTIC AND DIAGNOSTIC METHODS AND COMPOSITIONS BASED ON  
 JAGGED/NOTCH PROTEINS AND NUCLEIC ACIDS

<130> 053689-5002-01

<140> 09/579,536  
 <141> 2000-05-24

<150> US 09/199,865  
 <151> 1998-11-25

<150> PCT/US97/09407  
 <151> 1997-05-30

<150> US 60/018,841  
 <151> 1996-05-31

<160> 56

<170> PatentIn version 3.1

<210> 1  
 <211> 1218  
 <212> PRT  
 <213> Homo sapiens

<400> 1

Met Arg Ser Pro Arg Thr Arg Gly Arg Ser Gly Arg Pro Leu Ser Leu  
 1 5 10 15

Leu Leu Ala Leu Leu Cys Ala Leu Arg Ala Lys Val Cys Gly Ala Ser  
 20 25 30

Gly Gln Phe Glu Leu Glu Ile Leu Ser Met Gln Asn Val Asn Gly Glu  
 35 40 45

Leu Gln Asn Gly Asn Cys Cys Gly Gly Ala Arg Asn Pro Gly Asp Arg  
 50 55 60

Lys Cys Thr Arg Asp Glu Cys Asp Thr Tyr Phe Lys Val Cys Leu Lys  
 65 70 75 80

Glu Tyr Gln Ser Arg Val Thr Ala Gly Gly Pro Cys Ser Phe Gly Ser  
 85 90 95

Gly Ser Thr Pro Val Ile Gly Gly Asn Thr Phe Asn Leu Lys Ala Ser  
 100 105 110

Arg Gly Asn Asp Arg Asn Arg Ile Val Leu Pro Phe Ser Phe Ala Trp

115					120					125					
Pro	Arg	Ser	Tyr	Thr	Leu	Leu	Val	Glu	Ala	Trp	Asp	Ser	Ser	Asn	Asp
130					135					140					
Thr	Val	Gln	Pro	Asp	Ser	Ile	Ile	Glu	Lys	Ala	Ser	His	Ser	Gly	Met
145					150					155					160
Ile	Asn	Pro	Ser	Arg	Gln	Trp	Gln	Thr	Leu	Lys	Gln	Asn	Thr	Gly	Val
				165					170					175	
Ala	His	Phe	Glu	Tyr	Gln	Ile	Arg	Val	Thr	Cys	Asp	Asp	Tyr	Tyr	Tyr
			180					185					190		
Gly	Phe	Gly	Cys	Asn	Lys	Phe	Cys	Arg	Pro	Arg	Asp	Asp	Phe	Phe	Gly
	195						200					205			
His	Tyr	Ala	Cys	Asp	Gln	Asn	Gly	Asn	Lys	Thr	Cys	Met	Glu	Gly	Trp
	210					215					220				
Met	Gly	Pro	Glu	Cys	Asn	Arg	Ala	Ile	Cys	Arg	Gln	Gly	Cys	Ser	Pro
225					230					235					240
Lys	His	Gly	Ser	Cys	Lys	Leu	Pro	Gly	Asp	Cys	Arg	Cys	Gln	Tyr	Gly
				245					250					255	
Trp	Gln	Gly	Leu	Tyr	Cys	Asp	Lys	Cys	Ile	Pro	His	Pro	Gly	Cys	Val
			260					265					270		
His	Gly	Ile	Cys	Asn	Glu	Pro	Trp	Gln	Cys	Leu	Cys	Glu	Thr	Asn	Trp
		275					280					285			
Gly	Gly	Gln	Leu	Cys	Asp	Lys	Asp	Leu	Asn	Tyr	Cys	Gly	Thr	His	Gln
	290					295					300				
Pro	Cys	Leu	Asn	Gly	Gly	Thr	Cys	Ser	Asn	Thr	Gly	Pro	Asp	Lys	Tyr
305					310					315					320
Gln	Cys	Ser	Cys	Pro	Glu	Gly	Tyr	Ser	Gly	Pro	Asn	Cys	Glu	Ile	Ala
				325					330					335	
Glu	His	Ala	Cys	Leu	Ser	Asp	Pro	Cys	His	Asn	Arg	Gly	Ser	Cys	Lys
			340					345					350		
Glu	Thr	Ser	Leu	Gly	Phe	Glu	Cys	Glu	Cys	Ser	Pro	Gly	Trp	Thr	Gly
		355					360					365			
Pro	Thr	Cys	Ser	Thr	Asn	Ile	Asp	Asp	Cys	Ser	Pro	Asn	Asn	Cys	Ser
	370					375					380				
His	Gly	Gly	Thr	Cys	Gln	Asp	Leu	Val	Asn	Gly	Phe	Lys	Cys	Val	Cys
385					390					395					400
Pro	Pro	Gln	Trp	Thr	Gly	Lys	Thr	Cys	Gln	Leu	Asp	Ala	Asn	Glu	Cys
				405					410					415	
Glu	Ala	Lys	Pro	Cys	Val	Asn	Ala	Lys	Ser	Cys	Lys	Asn	Leu	Ile	Ala

420					425					430					
Ser	Tyr	Tyr	Cys	Asp	Cys	Leu	Pro	Gly	Trp	Met	Gly	Gln	Asn	Cys	Asp
		435					440					445			
Ile	Asn	Ile	Asn	Asp	Cys	Leu	Gly	Gln	Cys	Gln	Asn	Asp	Ala	Ser	Cys
		450				455					460				
Arg	Asp	Leu	Val	Asn	Gly	Tyr	Arg	Cys	Ile	Cys	Pro	Pro	Gly	Tyr	Ala
465						470					475				480
Gly	Asp	His	Cys	Glu	Arg	Asp	Ile	Asp	Glu	Cys	Ala	Ser	Asn	Pro	Cys
				485					490					495	
Leu	Asn	Gly	Gly	His	Cys	Gln	Asn	Glu	Ile	Asn	Arg	Phe	Gln	Cys	Leu
			500					505					510		
Cys	Pro	Thr	Gly	Phe	Ser	Gly	Asn	Leu	Cys	Gln	Leu	Asp	Ile	Asp	Tyr
			515				520					525			
Cys	Glu	Pro	Asn	Pro	Cys	Gln	Asn	Gly	Ala	Gln	Cys	Tyr	Asn	Arg	Ala
	530					535					540				
Ser	Asp	Tyr	Phe	Cys	Lys	Cys	Pro	Glu	Asp	Tyr	Glu	Gly	Lys	Asn	Cys
545						550					555				560
Ser	His	Leu	Lys	Asp	His	Cys	Arg	Thr	Thr	Pro	Cys	Glu	Val	Ile	Asp
				565					570					575	
Ser	Cys	Thr	Val	Ala	Met	Ala	Ser	Asn	Asp	Thr	Pro	Glu	Gly	Val	Arg
			580					585					590		
Tyr	Ile	Ser	Ser	Asn	Val	Cys	Gly	Pro	His	Gly	Lys	Cys	Lys	Ser	Gln
		595					600					605			
Ser	Gly	Gly	Lys	Phe	Thr	Cys	Asp	Cys	Asn	Lys	Gly	Phe	Thr	Gly	Thr
	610					615					620				
Tyr	Cys	His	Glu	Asn	Ile	Asn	Asp	Cys	Glu	Ser	Asn	Pro	Cys	Arg	Asn
625						630					635				640
Gly	Gly	Thr	Cys	Ile	Asp	Gly	Val	Asn	Ser	Tyr	Lys	Cys	Ile	Cys	Ser
				645					650					655	
Asp	Gly	Trp	Glu	Gly	Ala	Tyr	Cys	Glu	Thr	Asn	Ile	Asn	Asp	Cys	Ser
			660					665					670		
Gln	Asn	Pro	Cys	His	Asn	Gly	Gly	Thr	Cys	Arg	Asp	Leu	Val	Asn	Asp
		675					680					685			
Phe	Tyr	Cys	Asp	Cys	Lys	Asn	Gly	Trp	Lys	Gly	Lys	Thr	Cys	His	Ser
	690					695					700				
Arg	Asp	Ser	Gln	Cys	Asp	Glu	Ala	Thr	Cys	Asn	Asn	Gly	Gly	Thr	Cys
705						710					715				720
Tyr	Asp	Glu	Gly	Asp	Ala	Phe	Lys	Cys	Met	Cys	Pro	Gly	Gly	Trp	Glu

725										730										735															
Gly	Thr	Thr	Cys	Asn	Ile	Ala	Arg	Asn	Ser	Ser	Cys	Leu	Pro	Asn	Pro																				
			740					745					750																						
Cys	His	Asn	Gly	Gly	Thr	Cys	Val	Val	Asn	Gly	Glu	Ser	Phe	Thr	Cys																				
		755					760					765																							
Val	Cys	Lys	Glu	Gly	Trp	Glu	Gly	Pro	Ile	Cys	Ala	Gln	Asn	Thr	Asn																				
	770					775					780																								
Asp	Cys	Ser	Pro	His	Pro	Cys	Tyr	Asn	Ser	Gly	Thr	Cys	Val	Asp	Gly																				
	785				790					795					800																				
Asp	Asn	Trp	Tyr	Arg	Cys	Glu	Cys	Ala	Pro	Gly	Phe	Ala	Gly	Pro	Asp																				
				805					810					815																					
Cys	Arg	Ile	Asn	Ile	Asn	Glu	Cys	Gln	Ser	Ser	Pro	Cys	Ala	Phe	Gly																				
			820					825					830																						
Ala	Thr	Cys	Val	Asp	Glu	Ile	Asn	Gly	Tyr	Arg	Cys	Val	Cys	Pro	Pro																				
		835					840					845																							
Gly	His	Ser	Gly	Ala	Lys	Cys	Gln	Glu	Val	Ser	Gly	Arg	Pro	Cys	Ile																				
	850					855					860																								
Thr	Met	Gly	Ser	Val	Ile	Pro	Asp	Gly	Ala	Lys	Trp	Asp	Asp	Asp	Cys																				
	865				870					875					880																				
Asn	Thr	Cys	Gln	Cys	Leu	Asn	Gly	Arg	Ile	Ala	Cys	Ser	Lys	Val	Trp																				
				885					890					895																					
Cys	Gly	Pro	Arg	Pro	Cys	Leu	Leu	His	Lys	Gly	His	Ser	Glu	Cys	Pro																				
			900					905					910																						
Ser	Gly	Gln	Ser	Cys	Ile	Pro	Ile	Leu	Asp	Asp	Gln	Cys	Phe	Val	His																				
		915					920					925																							
Pro	Cys	Thr	Gly	Val	Gly	Glu	Cys	Arg	Ser	Ser	Ser	Leu	Gln	Pro	Val																				
		930				935						940																							
Lys	Thr	Lys	Cys	Thr	Ser	Asp	Ser	Tyr	Tyr	Gln	Asp	Asn	Cys	Ala	Asn																				
	945				950					955				960																					
Ile	Thr	Phe	Thr	Phe	Asn	Lys	Glu	Met	Met	Ser	Pro	Gly	Leu	Thr	Thr																				
				965					970					975																					
Glu	His	Ile	Cys	Ser	Glu	Leu	Arg	Asn	Leu	Asn	Ile	Leu	Lys	Asn	Val																				
			980					985					990																						
Ser	Ala	Glu	Tyr	Ser	Ile	Tyr	Ile	Ala	Cys	Glu	Pro	Ser	Pro	Ser	Ala																				
		995					1000					1005																							
Asn	Asn	Glu	Ile	His	Val	Ala	Ile	Ser	Ala	Glu	Asp	Ile	Arg	Asp																					
	1010					1015					1020																								
Asp	Gly	Asn	Pro	Ile	Lys	Glu	Ile	Thr	Asp	Lys	Ile	Ile	Asp	Leu																					

1025	1030	1035
Val Ser Lys Arg Asp Gly Asn Ser Ser Leu Ile Ala Ala Val Ala 1040	1045	1050
Glu Val Arg Val Gln Arg Arg Pro Leu Lys Asn Arg Thr Asp Phe 1055	1060	1065
Leu Val Pro Leu Leu Ser Ser Val Leu Thr Val Ala Trp Ile Cys 1070	1075	1080
Cys Leu Val Thr Ala Phe Tyr Trp Cys Leu Arg Lys Arg Arg Lys 1085	1090	1095
Pro Gly Ser His Thr His Ser Ala Ser Glu Asp Asn Thr Thr Asn 1100	1105	1110
Asn Val Arg Glu Gln Leu Asn Gln Ile Lys Asn Pro Ile Glu Lys 1115	1120	1125
His Gly Ala Asn Thr Val Pro Ile Lys Asp Tyr Glu Asn Lys Asn 1130	1135	1140
Ser Lys Met Ser Lys Ile Arg Thr His Asn Ser Glu Val Glu Glu 1145	1150	1155
Asp Asp Met Asp Lys His Gln Gln Lys Ala Arg Phe Gly Lys Gln 1160	1165	1170
Pro Ala Tyr Thr Leu Val Asp Arg Glu Glu Lys Pro Pro Asn Gly 1175	1180	1185
Thr Pro Thr Lys His Pro Asn Trp Thr Asn Lys Gln Asp Asn Arg 1190	1195	1200
Asp Leu Glu Ser Ala Gln Ser Leu Asn Arg Met Glu Tyr Ile Val 1205	1210	1215

<210> 2  
 <211> 3657  
 <212> DNA  
 <213> Homo sapiens

<400> 2  
 atgcgttccc cacggacrcg cggccggtcc gggcgcccc taagcctcct gctcgccctg 60  
 ctctgtgccc tgcgagccaa ggtgtgtggg gcctcgggtc agttcgagtt ggagatcctg 120  
 tccatgcaga acgtgaacgg ggagctgcag aacgggaact gctgcggcgg cgcccgaac 180  
 ccgggagacc gcaagtgcac ccgcgacgag tgtgacacat acttcaaagt gtgcctcaag 240  
 gagtatcagt cccgcgtcac ggccgggggg ccctgcagct tcggctcagg gtccacgcct 300  
 gtcacgggg gcaacacctt caacctcaag gccagccgcg gcaacgaccg caaccgcatc 360

gtgctgcctt	tcagtttcgc	ctggccgagg	tcctatacgt	tgcttggtga	ggcgtgggat	420
tccagtaatg	acaccgttca	acctgacagt	attattgaaa	aggettctca	ctcgggcatg	480
atcaacccca	gccggcagtg	gcagacgctg	aagcagaaca	cgggcgttgc	ccactttgag	540
tatcagatcc	gcgtgacctg	tgatgactac	tactatggct	ttggctgyaa	taagttctgc	600
cgccccagag	atgacttctt	tggacactat	gcctgtgacc	agaatggcaa	caaaacttgc	660
atggaaggct	ggatgggccc	cgaatgtaac	agagctatct	gccgacaagg	ctgcagtcct	720
aagcatgggt	cttgcaaaact	cccaggtgac	tgacaggtgcc	agtayggctg	gcaaggcctg	780
tactgtgata	agtgcacccc	acaccgggga	tgctgtccacg	gcacctgtaa	tgagccctgg	840
cagtgcctct	gtgagaccaa	ctggggcggc	cagctctgtg	acaaagatct	caattactgt	900
gggactcatc	agcgtgtctt	caacggggga	acttgtagca	acacaggccc	tgacaaatat	960
cagtgttctt	gccctgaggg	gtattcagga	cccaactgtg	aaattgctga	gcacgcctgc	1020
ctctctgatc	cctgtcacia	cagaggcagc	tgtaaggaga	cctccctggg	ctttgagtgt	1080
gagtgttccc	caggctggac	cggccccaca	tgctctacaa	acattgatga	ctgttctcct	1140
aataactgtt	cccacggggg	cacctgccag	gacctggtta	acggatttaa	gtgtgtgtgc	1200
ccccacagtg	ggactgggaa	aacgtgccag	ttagatgcaa	atgaatgtga	ggccaaacct	1260
tgtgtaaaacg	ccaaatcctg	taagaatctc	attgccagct	actactgcga	ctgtcttccc	1320
ggctggatgg	gtcagaattg	tgacataaat	attaatgact	gccttggcca	gtgtcagaat	1380
gacgcctcct	gtcgggattt	gggttaatgg	tatcgtgtga	tctgtccacc	tggtatgca	1440
ggcgatcact	gtgagagaga	catcgatgaa	tgtgccagca	acctctgttt	gaatgggggt	1500
cactgtcaga	atgaaatcaa	cagattccag	tgtctgtgtc	ccactggttt	ctctggaaac	1560
ctctgtcagc	tggacatoga	ttattgtgag	cctaaccctt	gccagaacgg	tgcccagtg	1620
tacaaccgtg	ccagtgaacta	tttctgcaag	tgccccgagg	actatgaggg	caagaactgc	1680
tcacacctga	aagaccactg	cgcacgacc	ccctgtgaag	tgattgacag	ctgcacagt	1740
gccatggctt	ccaacgacac	acctgaagg	gtgcggtata	tttctccaa	cgtctgtgg	1800
cctcacggga	agtgcagag	tcagtcggga	ggcaaattca	cctgtgactg	taacaaagg	1860
ttcacgggaa	catactgcca	tgaaaatatt	aatgactgtg	agagcaaccc	ttgtagaaac	1920
gggtggcactt	gcacgatgg	tgtcaactcc	tacaagtgca	tctgtagtga	cggctgggag	1980
ggggcctact	gtgaaaccaa	tattaatgac	tgacgccaga	acctctgcca	caatgggggc	2040
acgtgtcgcg	acctgggtcaa	tgacttctac	tgtgactgta	aaaatgggtg	gaaaggaaag	2100

acctgccact cacgtgacag tcagtgtgat gaggccacgt gcaacaacgg tggcacctgc 2160  
tatgatgagg gggatgcttt taagtgcattg tgcctggcg gctgggaagg aacaacctgt 2220  
aacatagccc gaaacagtag ctgcctgcc aaccttgcc ataatggggg cacatgtgtg 2280  
gtcaacggcg agtcctttac gtgcgtctgc aaggaaggct gggagggggc catctgtgct 2340  
cagaatacca atgactgcag ccctcatccc tgttacaaca gcggcacctg tgtggatgga 2400  
gacaactggt accggtgcga atgtgccccg ggttttgctg ggcccgaactg cagaataaac 2460  
atcaatgaat gccagtcttc acctgtgcc tttggagcga cctgtgtgga tgagatcaat 2520  
ggctaccggt gtgtctgccc tccagggcac agtggtgcca agtgccagga agtttcaggg 2580  
agaccttgca tcaccatggg gagtgtgata ccagatgggg ccaaattgga tgatgactgt 2640  
aatacctgcc agtgccctgaa tggacggatc gcctgctcaa aggtctgggtg tggccctcga 2700  
ccttgccctgc tccacaaagg gcacagcgag tgcccagcg ggcagagctg catccccatc 2760  
ctggacgacc agtgettcgt ccaccctgc actgggtgtg gcgagtgtcg gtcttccagt 2820  
ctccagccgg tgaagacaaa gtgcacctct gactcctatt accaggataa ctgtgcgaac 2880  
atcacattta cctttaacaa ggagatgatg tcaccaggtc ttactacgga gcacatttgc 2940  
agtgaattga ggaatttgaa tattttgaag aatggttccg ctgaatattc aatctacatc 3000  
gcttgcgagc ctcccccttc agcgaacaat gaaatacatg tggccatttc tgctgaagat 3060  
atacgggatg atgggaaccc gatcaaggaa atcactgaca aaataatcga tcttggttagt 3120  
aaacgtgatg gaaacagctc gctgattgct gccgttgca aagtaagagt tcagaggcgg 3180  
cctctgaaga acagaacaga tttccttggt cccttgctga gctctgtctt aactgtggct 3240  
tggatctggt gcttggtgac ggccttctac tggtgctgc ggaagcggcg gaagccgggc 3300  
agccacacac actcagcctc tgaggacaac accaccaaca acgtgcggga gcagctgaac 3360  
cagatcaaaa accccattga gaaacatggg gccaacacgg tccccatcaa ggattacgag 3420  
aacaagaact caaaatgtc taaaataagg acacacaatt ctgaagtaga agaggacgac 3480  
atggacaaac accagcagaa agcccgggtt ggcaagcagc cggcgatatac gctggtagac 3540  
agagaagaga agcccccaa cggcacgccg acaaacacc caaactggac aaacaaacag 3600  
gacaacagag acttggaag tgcccagagc ttaaacgaa tggagtacat cgtatag 3657

<210> 3  
<211> 22  
<212> DNA

<213> Artificial Sequence  
 <220>  
 <223> PCR primer  
 <400> 3  
 gcgcaagctt tttttttttt cg 22

<210> 4  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> PCR primer  
 <400> 4  
 gagaccgtga agatactt 18

<210> 5  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> PCR primer  
 <400> 5  
 ccgactgcag aataaacatc 20

<210> 6  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> PCR primer  
 <400> 6  
 ttggatctgg ttcagctgct 20

<210> 7  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> PCR primer  
 <400> 7  
 ttcagtgcg gccactgtga 20



<210> 8  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 8  
cacgtacatg aagtgcagct 20

<210> 9  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 9  
tgagtaggct ccatccagtc 20

<210> 10  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 10  
tgggtgtcagg tagggatgct 20

<210> 11  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 11  
ccacccatgg caaattccat ggca 24

<210> 12  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 12

tctagacggc aggtcaggtc cacc 24

<210> 13  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 13  
gactatgoga attcggatcc gtcgacgcca ccatgg 36

<210> 14  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 14  
caagttcccc cgttgagaca 20

<210> 15  
<211> 65  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 15  
gcatagtctt cgagttacaa gtcttcttca gaaataagct tttgttctac gatgtactcc 60

attcg 65

<210> 16  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 16  
atggacaaac accagcagaa 20

<210> 17  
<211> 3201  
<212> DNA  
<213> Homo sapiens

<400> 17

atgcggtccc cacggacrcg cggccggtcc gggcgcccc taagcctcct gctcgccctg	60
ctctgtgccc tgcgagccaa ggtgtgtggg gcctcgggtc agttcgagtt ggagatcctg	120
tccatgcaga acgtgaacgg ggagctgcag aacgggaact gctcgggcgg cggccggaac	180
ccgggagacc gcaagtgcac ccgcgacgag tgtgacacat acttcaaagt gtgcctcaag	240
gagtatcagt cccgcgtcac ggccgggggg ccctgcagct tcggctcagg gtccacgcct	300
gtcatcgggg gcaacacctt caacctcaag gccagccggg gcaacgaccg caaccgcctc	360
gtgctgcctt tcagtttcgc ctggccgagg tcctatacgt tgcttgtgga ggcgtgggat	420
tccagtaatg acaccgttca acctgacagt attattgaaa aggccttctca ctcgggcatg	480
atcaacccca gccggcagtg gcagacgctg aagcagaaca cgggcggtgc ccactttgag	540
tatcagatcc gcgtgacctg tgatgactac tactatggct ttggctgyaa taagttctgc	600
cggcccagag atgacttctt tggacactat gcctgtgacc agaatggcaa caaaacttgc	660
atggaaggct ggatgggccc cgaatgtaac agagctatct gccgacaagg ctgcagtcct	720
aagcatgggt cttgcaaact ccaggtgac tgcaggtgcc agtayggctg gcaaggcctg	780
tactgtgata agtgcacccc acaccggga tgcgtccaag gcattctgtaa tgagccctgg	840
cagtgcctct gtgagaccaa ctggggcggc cagctctgtg acaaagatct caattactgt	900
gggactcatc agccgtgtct caacggggga acttgtagca acacaggccc tgacaaatat	960
cagtgttcct gccctgaggg gtattcagga cccaactgtg aaattgctga gcacgcctgc	1020
ctctctgatc cctgtcacia cagaggcagc tgtaaggaga cctccctggg ctttgagtgt	1080
gagtgttccc caggetggac cggccccaca tgctctacaa acattgatga ctgttctcct	1140
aataactgtt cccacggggg cacctgccag gacctggtta acggatttaa gtgtgtgtgc	1200
ccccacagt ggactgggaa aacgtgccag ttagatgcaa atgaatgtga ggccaaacct	1260
tgtgtaaaacg ccaaactctg taagaatctc attgccagct actactgcga ctgtcttccc	1320
ggctggatgg gtcagaattg tgacataaat attaatgact gcottggcca gtgtcagaat	1380
gacgcctcct gtcgggattt ggttaatggg tatcgctgta tctgtccacc tggctatgca	1440
ggcgatcact gtgagagaga catcgatgaa tgtgccagca acccctgttt gaatgggggt	1500
cactgtcaga atgaaatcaa cagattccag tgtctgtgtc ccaactggttt ctctggaaac	1560
ctctgtcagc tggacatcga ttattgtgag cctaatacct gccagaacgg tgcccagtcg	1620
tacaaccgtg ccagtgacta tttctgcaag tgccccgagg actatgaggg caagaactgc	1680

tcacacctga aagaccactg ccgcacgacc ccctgtgaag tgattgacag ctgcacagtg	1740
gccatggcctt ccaacgacac acctgaaggg gtgcggtata tttcctccaa cgtctgtggt	1800
cctcacggga agtgcaagag tcagtcggga ggcaaattca cctgtgactg taacaaaggc	1860
ttcacgggaa catactgcca tgaaaatatt aatgactgtg agagcaaccc ttgtagaaac	1920
ggtggcactt gcacgatgg tgtcaactcc tacaagtgca tctgtagtga cggctgggag	1980
ggggcctact gtgaaaccaa tattaatgac tgcagccaga acccctgcc caatgggggc	2040
acgtgtcgcg acctgggtcaa tgacttctac tgtgactgta aaaatgggtg gaaaggaaag	2100
acctgccact cacgtgacag tcagtgatgat gaggccacgt gcaacaacgg tggcacctgc	2160
tatgatgagg gggatgcttt taagtgcag tgtcctggcg gctgggaagg aacaacctgt	2220
aacatagccc gaaacagtag ctgcctgcc aaccctgcc ataatggggg cacatgtgtg	2280
gtcaacggcg agtcctttac gtgcgtctgc aaggaaggct gggaggggccc catctgtgct	2340
cagaatacca atgactgcag ccctcatccc tgttacaaca gcggcacctg tgtggatgga	2400
gacaactggt accggtgcga atgtgccccg ggttttgctg ggcccgactg cagaataaac	2460
atcaatgaat gccagtcttc acctgtgcc tttggagcga cctgtgtgga tgagatcaat	2520
ggctaccggt gtgtctgcc tccagggcac agtgggtgcc agtgccagga agtttcaggg	2580
agaccttgca tcacctggg gagtgtgata ccagatgggg ccaaattggga tgatgactgt	2640
aatacctgcc agtgctgaa tggacggatc gcctgctcaa aggtctggtg tggccctcga	2700
ccttgctgc tocacaaagg gcacagcgag tgccccagcg ggcagagctg catccccatc	2760
ctggacgacc agtgcttcgt ccacctctgc actggtgtgg gcgagtgtcg gtcttcagct	2820
ctccagccgg tgaagacaaa gtgcacctct gactcctatt accaggataa ctgtgcgaac	2880
atcacattta cctttaacaa ggagatgatg tcaccaggtc ttactacgga gcacatttgc	2940
agtgaattga ggaatttgaa tttttgaag aatgtttccg ctgaatatcc aatctacatc	3000
gcttgcgagc cttcccttc agcgaacaat gaaatacatg tggccatttc tgctgaagat	3060
atacgggatg atgggaaccc gatcaaggaa atcactgaca aaataatcga tcttgtagt	3120
aaacgtgatg gaaacagctc gctgattgct gccgttgag aagtaagagt tcagaggcgg	3180
cctctgaaga acagaacaga t	3201

<210> 18  
 <211> 1067  
 <212> PRT

<213> Homo sapiens

<400> 18

Met Arg Ser Pro Arg Thr Arg Gly Arg Ser Gly Arg Pro Leu Ser Leu  
1 5 10 15  
Leu Leu Ala Leu Leu Cys Ala Leu Arg Ala Lys Val Cys Gly Ala Ser  
20 25 30  
Gly Gln Phe Glu Leu Glu Ile Leu Ser Met Gln Asn Val Asn Gly Glu  
35 40 45  
Leu Gln Asn Gly Asn Cys Cys Gly Gly Ala Arg Asn Pro Gly Asp Arg  
50 55 60  
Lys Cys Thr Arg Asp Glu Cys Asp Thr Tyr Phe Lys Val Cys Leu Lys  
65 70 75 80  
Glu Tyr Gln Ser Arg Val Thr Ala Gly Gly Pro Cys Ser Phe Gly Ser  
85 90 95  
Gly Ser Thr Pro Val Ile Gly Gly Asn Thr Phe Asn Leu Lys Ala Ser  
100 105 110  
Arg Gly Asn Asp Arg Asn Arg Ile Val Leu Pro Phe Ser Phe Ala Trp  
115 120 125  
Pro Arg Ser Tyr Thr Leu Leu Val Glu Ala Trp Asp Ser Ser Asn Asp  
130 135 140  
Thr Val Gln Pro Asp Ser Ile Ile Glu Lys Ala Ser His Ser Gly Met  
145 150 155 160  
Ile Asn Pro Ser Arg Gln Trp Gln Thr Leu Lys Gln Asn Thr Gly Val  
165 170 175  
Ala His Phe Glu Tyr Gln Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr  
180 185 190  
Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly  
195 200 205  
His Tyr Ala Cys Asp Gln Asn Gly Asn Lys Thr Cys Met Glu Gly Trp  
210 215 220  
Met Gly Pro Glu Cys Asn Arg Ala Ile Cys Arg Gln Gly Cys Ser Pro  
225 230 235 240  
Lys His Gly Ser Cys Lys Leu Pro Gly Asp Cys Arg Cys Gln Tyr Gly  
245 250 255  
Trp Gln Gly Leu Tyr Cys Asp Lys Cys Ile Pro His Pro Gly Cys Val  
260 265 270  
His Gly Ile Cys Asn Glu Pro Trp Gln Cys Leu Cys Glu Thr Asn Trp  
275 280 285

Gly	Gly	Gln	Leu	Cys	Asp	Lys	Asp	Leu	Asn	Tyr	Cys	Gly	Thr	His	Gln	
290						295					300					
Pro	Cys	Leu	Asn	Gly	Gly	Thr	Cys	Ser	Asn	Thr	Gly	Pro	Asp	Lys	Tyr	
305				310						315					320	
Gln	Cys	Ser	Cys	Pro	Glu	Gly	Tyr	Ser	Gly	Pro	Asn	Cys	Glu	Ile	Ala	
				325					330					335		
Glu	His	Ala	Cys	Leu	Ser	Asp	Pro	Cys	His	Asn	Arg	Gly	Ser	Cys	Lys	
			340					345					350			
Glu	Thr	Ser	Leu	Gly	Phe	Glu	Cys	Glu	Cys	Ser	Pro	Gly	Trp	Thr	Gly	
		355					360						365			
Pro	Thr	Cys	Ser	Thr	Asn	Ile	Asp	Asp	Cys	Ser	Pro	Asn	Asn	Cys	Ser	
	370					375						380				
His	Gly	Gly	Thr	Cys	Gln	Asp	Leu	Val	Asn	Gly	Phe	Lys	Cys	Val	Cys	
385					390					395					400	
Pro	Pro	Gln	Trp	Thr	Gly	Lys	Thr	Cys	Gln	Leu	Asp	Ala	Asn	Glu	Cys	
			405						410					415		
Glu	Ala	Lys	Pro	Cys	Val	Asn	Ala	Lys	Ser	Cys	Lys	Asn	Leu	Ile	Ala	
			420					425					430			
Ser	Tyr	Tyr	Cys	Asp	Cys	Leu	Pro	Gly	Trp	Met	Gly	Gln	Asn	Cys	Asp	
		435					440					445				
Ile	Asn	Ile	Asn	Asp	Cys	Leu	Gly	Gln	Cys	Gln	Asn	Asp	Ala	Ser	Cys	
	450					455					460					
Arg	Asp	Leu	Val	Asn	Gly	Tyr	Arg	Cys	Ile	Cys	Pro	Pro	Gly	Tyr	Ala	
465					470					475					480	
Gly	Asp	His	Cys	Glu	Arg	Asp	Ile	Asp	Glu	Cys	Ala	Ser	Asn	Pro	Cys	
				485					490					495		
Leu	Asn	Gly	Gly	His	Cys	Gln	Asn	Glu	Ile	Asn	Arg	Phe	Gln	Cys	Leu	
			500					505					510			
Cys	Pro	Thr	Gly	Phe	Ser	Gly	Asn	Leu	Cys	Gln	Leu	Asp	Ile	Asp	Tyr	
		515					520					525				
Cys	Glu	Pro	Asn	Pro	Cys	Gln	Asn	Gly	Ala	Gln	Cys	Tyr	Asn	Arg	Ala	
	530					535					540					
Ser	Asp	Tyr	Phe	Cys	Lys	Cys	Pro	Glu	Asp	Tyr	Glu	Gly	Lys	Asn	Cys	
545					550					555					560	
Ser	His	Leu	Lys	Asp	His	Cys	Arg	Thr	Thr	Pro	Cys	Glu	Val	Ile	Asp	
			565						570					575		
Ser	Cys	Thr	Val	Ala	Met	Ala	Ser	Asn	Asp	Thr	Pro	Glu	Gly	Val	Arg	
			580					585					590			

Tyr Ile Ser Ser Asn Val Cys Gly Pro His Gly Lys Cys Lys Ser Gln  
 595 600 605  
 Ser Gly Gly Lys Phe Thr Cys Asp Cys Asn Lys Gly Phe Thr Gly Thr  
 610 615 620  
 Tyr Cys His Glu Asn Ile Asn Asp Cys Glu Ser Asn Pro Cys Arg Asn  
 625 630 635 640  
 Gly Gly Thr Cys Ile Asp Gly Val Asn Ser Tyr Lys Cys Ile Cys Ser  
 645 650 655  
 Asp Gly Trp Glu Gly Ala Tyr Cys Glu Thr Asn Ile Asn Asp Cys Ser  
 660 665 670  
 Gln Asn Pro Cys His Asn Gly Gly Thr Cys Arg Asp Leu Val Asn Asp  
 675 680 685  
 Phe Tyr Cys Asp Cys Lys Asn Gly Trp Lys Gly Lys Thr Cys His Ser  
 690 695 700  
 Arg Asp Ser Gln Cys Asp Glu Ala Thr Cys Asn Asn Gly Gly Thr Cys  
 705 710 715 720  
 Tyr Asp Glu Gly Asp Ala Phe Lys Cys Met Cys Pro Gly Gly Trp Glu  
 725 730 735  
 Gly Thr Thr Cys Asn Ile Ala Arg Asn Ser Ser Cys Leu Pro Asn Pro  
 740 745 750  
 Cys His Asn Gly Gly Thr Cys Val Val Asn Gly Glu Ser Phe Thr Cys  
 755 760 765  
 Val Cys Lys Glu Gly Trp Glu Gly Pro Ile Cys Ala Gln Asn Thr Asn  
 770 775 780  
 Asp Cys Ser Pro His Pro Cys Tyr Asn Ser Gly Thr Cys Val Asp Gly  
 785 790 795 800  
 Asp Asn Trp Tyr Arg Cys Glu Cys Ala Pro Gly Phe Ala Gly Pro Asp  
 805 810 815  
 Cys Arg Ile Asn Ile Asn Glu Cys Gln Ser Ser Pro Cys Ala Phe Gly  
 820 825 830  
 Ala Thr Cys Val Asp Glu Ile Asn Gly Tyr Arg Cys Val Cys Pro Pro  
 835 840 845  
 Gly His Ser Gly Ala Lys Cys Gln Glu Val Ser Gly Arg Pro Cys Ile  
 850 855 860  
 Thr Met Gly Ser Val Ile Pro Asp Gly Ala Lys Trp Asp Asp Asp Cys  
 865 870 875 880  
 Asn Thr Cys Gln Cys Leu Asn Gly Arg Ile Ala Cys Ser Lys Val Trp  
 885 890 895

Cys Gly Pro Arg Pro Cys Leu Leu His Lys Gly His Ser Glu Cys Pro  
 900 905 910  
 Ser Gly Gln Ser Cys Ile Pro Ile Leu Asp Asp Gln Cys Phe Val His  
 915 920 925  
 Pro Cys Thr Gly Val Gly Glu Cys Arg Ser Ser Ser Leu Gln Pro Val  
 930 935 940  
 Lys Thr Lys Cys Thr Ser Asp Ser Tyr Tyr Gln Asp Asn Cys Ala Asn  
 945 950 955 960  
 Ile Thr Phe Thr Phe Asn Lys Glu Met Met Ser Pro Gly Leu Thr Thr  
 965 970 975  
 Glu His Ile Cys Ser Glu Leu Arg Asn Leu Asn Ile Leu Lys Asn Val  
 980 985 990  
 Ser Ala Glu Tyr Ser Ile Tyr Ile Ala Cys Glu Pro Ser Pro Ser Ala  
 995 1000 1005  
 Asn Asn Glu Ile His Val Ala Ile Ser Ala Glu Asp Ile Arg Asp  
 1010 1015 1020  
 Asp Gly Asn Pro Ile Lys Glu Ile Thr Asp Lys Ile Ile Asp Leu  
 1025 1030 1035  
 Val Ser Lys Arg Asp Gly Asn Ser Ser Leu Ile Ala Ala Val Ala  
 1040 1045 1050  
 Glu Val Arg Val Gln Arg Arg Pro Leu Lys Asn Arg Thr Asp  
 1055 1060 1065

<210> 19  
 <211> 54  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 19  
 gactatgcga attcggatcc gtcgacgccca ccatgggttc cccacggaca cgcg

54

<210> 20  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 20  
 caagttcccc cggtgagaca

20



<210> 21  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> PCR primer  
  
 <400> 21  
 atggacaaac accagcagaa 20  
  
 <210> 22  
 <211> 65  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> PCR primer  
  
 <400> 22  
 tagtgctcga gctattacaa gtcttcttca gaaataagct tttgttcac tgttctgttc 60  
 ttcag 65  
  
 <210> 23  
 <211> 44  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> PCR primer  
  
 <400> 23  
 tttggatttg ctggtgcagt acaactaggc ttaataggga catg 44  
  
 <210> 24  
 <211> 37  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> PCR primer  
  
 <400> 24  
 tccctattaa gcctagttgt actgcaccag caaatcc 37  
  
 <210> 25  
 <211> 42  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 25  
 tttctgctcg aattcaagct tctaacgatg tacggggaca tg 42

<210> 26  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 26  
 tccccgtaca tcgttagaag cttgaattcg agcag 35

<210> 27  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 27  
 ggatttgctg gtgcagtaca act 23

<210> 28  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 28  
 ctgctcgaat tcaagcttct aac 23

<210> 29  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Jagged antisense oligomer

<400> 29  
 tggggaccgc atcgctgc 18

<210> 30  
 <211> 18

<212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Jagged sense oligomer  
  
 <400> 30  
 gcagcgatgc ggtcccca 18  
  
 <210> 31  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> 3' Jagged antisense oligomer  
  
 <400> 31  
 gaatcaaggc tcccctag 18  
  
 <210> 32  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Mutated 5' Jagged antisense oligomer  
  
 <400> 32  
 tgcggtcccc aacggtgg 18  
  
 <210> 33  
 <211> 4  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 33  
  
 Pro Glu Ser Thr  
 1  
  
 <210> 34  
 <211> 10  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 34  
 tggatcagtc 10  
  
 <210> 35  
 <211> 10  
 <212> DNA

<213> Mus musculus	
<400> 35	
taaagaggcc	10
<210> 36	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 36	
cctgatcttt	10
<210> 37	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 37	
tgtaacagga	10
<210> 38	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 38	
tctgtgcacc	10
<210> 39	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 39	
ccaaataaaa	10
<210> 40	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 40	
ctaataaaag	10
<210> 41	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 41	

gccaagggtc	10
<210> 42	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 42	
gtctgctgat	10
<210> 43	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 43	
aaggaagaga	10
<210> 44	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 44	
tgaaataaac	10
<210> 45	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 45	
caccaccaca	10
<210> 46	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 46	
cctcagcctg	10
<210> 47	
<211> 10	
<212> DNA	
<213> Mus musculus	
<400> 47	
ctctgactta	10

<210>	48	
<211>	10	
<212>	DNA	
<213>	Mus musculus	
<400>	48	
	gtgggcgtgt	10
<210>	49	
<211>	10	
<212>	DNA	
<213>	Mus musculus	
<400>	49	
	tccttggggg	10
<210>	50	
<211>	10	
<212>	DNA	
<213>	Mus musculus	
<400>	50	
	cgcctgctag	10
<210>	51	
<211>	10	
<212>	DNA	
<213>	Mus musculus	
<400>	51	
	aaaaaaaaaa	10
<210>	52	
<211>	10	
<212>	DNA	
<213>	Mus musculus	
<400>	52	
	aagcagaagg	10
<210>	53	
<211>	10	
<212>	DNA	
<213>	Mus musculus	
<400>	53	
	caggactccg	10
<210>	54	
<211>	10	
<212>	DNA	

<213> Mus musculus

<400> 54  
gaagcaggac

10

<210> 55

<211> 10

<212> DNA

<213> Mus musculus

<400> 55  
ggatatgtgg

10

<210> 56

<211> 10

<212> DNA

<213> Mus musculus

<400> 56  
gttctgattg

10